

In re Patent Application of:
PURDY ET AL.
Serial No. 10/776,426
Filing Date: **FEBRUARY 11, 2004**

REMARKS

Claims 1-33 are pending in the application. Independent Claims 1, 15, and 25 have been amended to more clearly define the subject matter thereof over the prior art. Support for the amendments may be found in paragraph 0036-0039 and Table 2 of the originally filed specification, for example. Dependent Claims 7 and 29 have been amended for consistency with the changes to Claims 1 and 25, and also to correct a minor typographical error. No new matter is being added.

In view of the amendments and arguments presented in detail below, it is submitted that all of the claims are patentable.

I. The Claimed Invention

The present invention is directed to a battery charger. As recited in amended independent Claim 1, for example, the battery charger includes a charger connector to be coupled to a corresponding device connector of a portable device including a rechargeable battery. The portable device and rechargeable battery each respectively have a portable device type and a rechargeable battery type associated therewith from among a plurality of different portable device types and different battery types having respective charging rates. The battery charger further includes a charging circuit connected to the charger connector, and a controller connected to the charger connector and the charging circuit. The controller is for causing

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a portable device connected to the charger connector to identify its corresponding portable device type and its corresponding rechargeable battery type, and for causing the charging circuit to charge the rechargeable battery based thereon at the respective charging rate thereof. Independent Claim 15 is directed to a related battery charging system, and independent Claim 25 is directed to a related battery charging method.

II. The Claims Are Patentable

The Examiner rejected independent Claims 1, 15, and 25 over U.S. Patent No. 6,614,206 to Wong et al. in view of U.S. Patent Pub. No. 2003/0137277 to Mori et al. Wong et al. is directed to a universal USB charging accessory that includes a charging apparatus **600** that can be connected to and charge several devices, such as PDAs, cell phones, laptops, etc. See, e.g., FIG. 8 of Wong et al. The Examiner points particularly to the text at col. 6, lines 25-27, which states that electrical power for recharging the battery powered devices is "controlled to the appropriate recharging levels," and contends that this inherently means that the charging apparatus **600** somehow learns what device and battery type is connected thereto, since it charges multiple different types of devices to the "appropriate levels."

Nonetheless, the Examiner correctly acknowledges that "Wong [et al.] does not go into detail about how the identification process/communications occurs." Office Action,

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page 3. The Examiner contends that Mori et al. properly supplies this teaching. Mori et al. is directed to a battery and maintenance service system for a power supply device. In particular, the Examiner points to an embodiment discussed in paragraph 0016 of Mori et al. in which an electronic device transmits operation state data of its battery power source via a battery management means to a service handling server. This is done so that the service handling server can determine when a replacement battery is needed so that the battery can preemptively be replaced before failure.

Moreover, the Examiner further contends that Mori et al. teaches at least one actual charging parameter. As support, the Examiner points to paragraph 0079 of Mori et al., which is reproduced below for convenience of reference.

"[0079] The battery power source device **3** is provided with the rechargeable battery **6**, the battery management means **7**, the communication means **8**, the memory means **9**, and the protection safety means **10**, and constitutes a smart battery system along with the power management controller **12** and the charging circuit (a smart charger) **14**. The battery management means **7** always detects battery management information (operation state data) such as the battery voltage, the battery temperature, the remaining capacity, and the charging and discharging cycle of the rechargeable battery **6**. The protection safety means **10** protects the rechargeable battery **6** from over charge and over discharge, and the rechargeable battery **6** is charged and discharged

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through the protection safety means **10**. The memory means **9** is a memory to, which the identification information such as a serial number and a maker name of the battery power source device **3** are written. The communication means **8** provides the power source monitor **4** with the battery management information on the rechargeable battery **6** detected by the battery management means **7**, and the identification information stored in the memory means **9** on request from the PC main unit." (Emphasis added).

As noted above, independent Claims 1, 15, and 25 have been amended to recite that different battery types have respective charging rates, and that the charging circuit charges rechargeable batteries at respective charging rates thereof. Nowhere does Mori et al. (nor any of the remaining prior art of record) teach or fairly suggest charging different battery types based upon respective charge rates thereof as recited in these claims. Rather, Mori et al. tracks battery voltage, battery temperature, remaining capacity, and charging/discharging cycle information.

While Mori et al. does not provide an explicit definition of what is meant by charging/discharging cycle information, it states the following in paragraph 0072 thereof: "[a]s an example of the abnormality, when it is determined that the life of the rechargeable battery **6** is expiring based on data on the charging and discharging cycle, and a lapsed time after the purchase, because it is necessary to promptly replace the

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battery, a message for prompting the replacement of the battery may be shown as the action information via the e-mail." Thus, the charging/discharging data is used by Mori et al. as an indicator of battery life. The logical conclusion of this statement is that the charging/discharging data is the number of times a given battery has been charged/discharged (i.e., how many charging cycles it has been through). This interpretation is consistent with industry terminology. See, e.g., "A Comparison of Rechargeable Batteries" from the topic "Rechargeable battery" on Wikipedia ([http://en.wikipedia.org/wiki/Rechargeable battery](http://en.wikipedia.org/wiki/Rechargeable_battery)). For example: "Nickel cadmium battery: This chemistry gives the longest cycle life (over 1500 cycles)" (Emphasis added). Moreover, the comparison table provided under this topic includes a column for "cycle durability," which is measured in a number of charge cycles.

Thus, neither Mori et al. nor Wong et al. teaches or fairly suggests all of the recitations of independent Claims 1, 15, and 25. Since the remaining prior art of record also fails to properly provide the above-noted deficiencies, it is respectfully submitted that these claims are patentable over the prior art. Their respective dependent claims, which recite still further distinguishing features, are also patentable over the prior art and require no further discussion herein.

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CONCLUSION

In view of the amendments to the claims and the arguments provided herein, it is submitted that all the claims are patentable. Accordingly, a Notice of Allowance is requested in due course. Should any minor informalities need to be addressed, the Examiner is encouraged to contact the undersigned attorney at the telephone number listed below.

Respectfully submitted,



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